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EXAMINER

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ART UNIT	PAPER NUMBER
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2621

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 19 objected to because of the following: Examiner respectfully suggest that applicant should change the claim language of "a computer-readable medium having computer-executable instructions for performing" to "a computer-readable medium stored therein computer-executable instructions, when executed by the computer performs the" to convey with the recent guidelines.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 18 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what applicant actually means in regards to current camera view is a "weighted random" choice, as now claimed. It is not clear how they are related. Clarification is requested. For the purpose of art rejection, the limitations as claimed would be treated as best understood by the examiner.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 23 and 25 - 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michael H. Bianchi (a Fully Automatic, Multi-Camera System to Televisе Auditorium Presentations) in view of Qiong Liu (Automatic Camera Management for Lecture Room Environments).

Regarding claim 1, H. Bianchi teaches, an automated audio/visual presentation of a lecture (fig. 1), and a camera system that provides multiple camera views of the lecture, (fig. 1, page 2, lines 6 - 14), a virtual director that uses probabilistic rules to select a current camera view from the multiple camera views and is capable of changing the current camera view by switching between the multiple camera views in response to a triggering event (page 2, lines 10 – page 6, lines 9).

H. Bianchi is silent in regards to explicitly mention a set of expert video production rules that applied to select camera view.

However, such features are well known and used as evidenced by Liu. In particular, Liu teaches the use of a set of expert video production rules that applied to select camera view (i.e., noted that page 3, paragraph 3.3, where teaches rules govern what a director should do to select camera view).

In view of the above, taking the combined of H. Bianchi and Liu as a whole, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to modify fully automatic multi camera system of Bianchi in accordance with the teaching of Liu to include rules that dictates what a director should do for the purpose of obtaining better video quality (i.e., see Liu, page 3, paragraph 3.3).

Regarding claim 2, combination of Bianchi and Liu teaches, wherein, the set of expert video production rules is applied by the virtual director to determine to which of the multiple camera views to switch (Liu, page 3, paragraph 3.3).

Regarding claim 3, combination of Bianchi and Liu teaches, triggering event and determine when to switch the current camera view, are discussed with regards to claims 1 – 2 above.

Regarding claim 4, combination of Bianchi and Liu teaches, wherein the camera system includes a single camera (Bianchi, Pages 2 – 3, tracking camera).

Regarding claim 5, combination of Bianchi and Liu teaches, wherein the camera system includes a plurality of cameras (Bianchi, page 2, lines 12 – 13).

Regarding claim 6, Bianchi is silent in regards to explicitly mention, cinematographer that controls a camera in tracking an object within the lecture.

However, such features are well known and used as evidenced by Liu (page 4, paragraph 4.2) where teaches high quality video are usually produced by a video production team that includes a director and multiple cinematographers.

In view of the above, taking the combined teaching of H. Bianchi and Liu as a whole, it would have been obvious to one of ordinary skilled in the art at the time of the

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invention was made to utilize fully automatic multi camera system of Bianchi in accordance with the teaching of Liu to produce a high quality lecture video as suggested by (i.e. Liu, page 4, paragraph 4.2).

Regarding claim 7, combination of Bianchi and Liu teaches, providing a camera view of an audience, (Bianchi, page 1, abstract)

Regarding claim 8, Bianchi teaches, a microphone-array, which could help the director and/or tracking camera decide which person to show/track to the remote audiences (Bianchi, page 2, lines 15 – 16, page 10, lines 6 - 8).

Bianchi is silent in regards to explicitly mention, audience-tracking camera in tracking a member of the audience.

However, such features are well known and used as evidenced by Liu (page 5, paragraph 4.2.2) where teaches audience-tracking camera, to locate talking audience members.

In view of the above, taking the combined teaching of H. Bianchi and Liu as a whole, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to modify fully automatic multi camera system of Bianchi in accordance with the teaching of Liu to include audience-tracking camera, to locate talking audience members, as suggested by (i.e., see Liu, page 5, paragraph 4.2.2).

Regarding claims 9 - 10, combination of Bianchi and Liu teaches, an audience-tracking status module that provides status information of the audience-tracking camera, in claim 9, (Liu, page 5, paragraph 4.2.2), and wherein the status information includes a plurality of possible statuses, in claim 10 (Liu, page 6, lines 11 – 41).

Regarding claim 11, combination of Bianchi and Liu teaches, wherein the camera system includes a lecturer-tracking camera that provides a camera view of a lecturer (Bianchi, fig. 2).

Regarding claim 12, combination of Bianchi and Liu teaches, a history-based, reduced-motion tracker that controls the lecturer-tracking camera in tracking the lecturer based on a history of the lecturer's movement, (Liu, page 5, 7 – 12).

Regarding claim 13, Bianchi is silent in regards to explicitly mention, a lecturer-tracking status module that provides status information of the lecturer-tracking camera to the virtual director.

However, such features are well known and used as evidenced by (i.e. Liu, page 6, lines 14 – 36) which provides status information of the lecturer-tracking camera to the virtual director.

In view of the above, taking the combined teaching of H. Bianchi and Liu as a whole, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to modify fully automatic multi camera system of Bianchi in accordance with the teaching of Liu to include a lecturer-tracking status module for the purpose of properly switch cameras.

Regarding claim 14, combination of Bianchi and Liu teaches, wherein the virtual director includes an event generator that generates the triggering event, (Bianchi, page 2, Auto Auditorium tracking camera).

Regarding claim 15, combination of Bianchi and Liu teaches, wherein the event generator further comprises a time transition module that determines when to switch the current camera view (Liu, page 3, paragraph 3.3, no. 4 – 5).

Regarding claim 16, combination of Bianchi and Liu teaches, wherein the event generator further comprises a location transition module that determines to which of the multiple camera view to switch (Liu, page 4, lines 29 – 30).

Regarding claim 17, combination of Bianchi and Liu teaches, wherein the location transition module is a probabilistic finite state machine having multiple states, (Liu, page 5, paragraph 4.2.3, page 6, lines 1 – 10, FSM machine).

Regarding claim 18, the limitations claimed have been analyzed and rejected with respect to claim 1. Furthermore, as for the additional limitation “current camera view is a random choice” (i.e. see Liu, page 2, right column, lines 43 – 45 and page 6, left column, rule 8).

Regarding claim 19, combination of Bianchi and Liu teaches, computer-readable medium having computer-executable instructions (i.e. see Bianchi, abstract, also page 2, 6 – 8) and computer executable instruction would have been necessitated by the system.

Regarding claim 20, combination of Bianchi and Liu teaches, wherein the set of expert video production rules are a set of constraints for producing the video (Liu, page 3, left column, no. 3, video production).

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Regarding claim 21, combination of Bianchi and Liu teaches, wherein the set of expert video production rules is obtained by determining rules used by human experts in a video production field (Liu, page 4, right column, paragraph 4.2).

Regarding claims 22 - 23, the limitations claimed have been analyzed and rejected with respect to claims 1 and 14.

Regarding claim 25, the limitations claimed have been analyzed and rejected with respect to claim 17 above.

Regarding claim 26, the limitations claimed have been analyzed and rejected with respect to claim 7.

Regarding claim 27, the limitations claimed have been analyzed and rejected with respect to claim 8.

Regarding claim 28, the limitations claimed have been analyzed and rejected with respect to claim 11.

Regarding claims 29 - 30, the limitations claimed have been analyzed and rejected with respect to claims 1 and 12.

Regarding claim 31, the limitations claimed have been analyzed and rejected with respect to claim 18.

Regarding claim 32, combination of Bianchi and Liu teaches, overview camera (Bianchi, camera system page 3, lines 1 – 5 and Liu, page 6, left column, lines 7 – 8).

Regarding claim 33, the limitations claimed have been analyzed and rejected with respect to claim 22.

Regarding claim 34, the limitations claimed have been analyzed and rejected with respect to claim 15.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418**.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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Or faxed to:

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Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000**.

B. M. S.

Mehrdad Dastouri
MEHRDAD DASTOURI
SUPERVISORY PATENT EXAMINER
TC 2600